ABSTRACT OF THE DISCLOSURE

The detected values of a common rail pressure that were detected by a pressure sensor are read within crank angle periods Δt which are at least not more than half of a pumping cycle ΔT of a supply pump, the values detected within one pumping cycle preceding a reading time (for example, S(1), S(0), ... S(-4)) are averaged during each of the reading times, and the value thus obtained (for example, Pav(1)) is used as a common rail pressure after averaging processing, which is a representative value or a control value of the actual common rail pressure. The feedback control of common rail pressure is executed by using the values of common rail pressure after averaging processing thus computed by moving averaging. Consequently, the actual common rail pressure is converted into values suitable for control, and the feedback control of common rail pressure is executed with higher accuracy.